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## New Studies Underscore Competing Pressures On EPA Over Gas Fracking

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Two new studies are highlighting the competing pressures EPA faces as it prepares a study on the natural gas extraction practice known as hydraulic fracturing, or fracking, with industry touting a recent study that warns that EPA's study could end the booming industry while activists are warning of the severe health effects of chemicals used in the practice.

The American Petroleum Institute (API) recently highlighted a Sept. 14 study, "The Global Gas Challenge," by the consulting and financial services firm Ernst & Young, that generally predicts a rosy future for the industry but warns that EPA's pending study on fracking's environmental impacts could end the boom.

"Investments in shale gas developments may dry up if hydraulic fracturing were to be outlawed or significantly limited as a result of the findings of the [EPA] study," Ernst & Young says.

But the Endocrine Disruption Exchange (TEDX), an advocacy group concerned about harms from chemicals, recently unveiled a new study highlighting concerns about the risks of chemicals used in fracking. "There may be long-term health effects that are not immediately recognized," the TEDX study says.

Fracking requires drillers to inject large amounts of water and chemicals underground to crack shale deposits and release natural gas. The practice has allowed the industry to tap into previously unavailable gas reserves, significantly boosting supplies of the fuel at a time when many view it as a bridge fuel necessary to achieve a low-carbon future.

But environmentalists and others are increasingly concerned about the environmental impacts of the practice, especially since Congress, in the 2005 energy law, exempted fracking from EPA regulatory oversight.

In the face of growing concerns, Congress last year asked EPA to again study hydraulic fracturing, in lieu of passing a bill that would have restored the agency's regulatory authority. EPA is now seeking comment on the scope of the study, which is expected to be complete in 2012.

The Ernst & Young report, released at the World Energy Congress in Montreal, says the greatest concern about the growth of the domestic shale gas industry, which widely uses fracking to reach previously inaccessible gas supplies, is possible negative impacts from the pending EPA study.

"The main factor that is likely to inhibit the projected growth in shale gas production is new environmental legislation," the report says. "A comprehensive study is currently being undertaken by [EPA] into the impact of hydraulic fracturing on water quality and public health. Investments in shale gas developments may dry up if hydraulic fracturing were to be outlawed or significantly limited as a result of the findings of the study."

### **Unconventional Natural Gas Business**

In a press release unveiling the report, an Ernst & Young official says the unconventional natural gas business "may have already" changed the overall supply and demand balance in North America, and perhaps globally. "It's possible we could be onto something big, but there are many uncertainties including growing environmental concerns, technology challenges, water availability and land issues," the official says.

Among those raising concerns about the health and environmental risks of fracking is TEDX, which Sept. 21 released its own study of the chemicals

used in fracking. The study, partly funded by EPA, concludes "toxic chemicals are used during both the fracturing and drilling phases of gas operations, that there may be long-term health effects that are not immediately recognized, and that waste evaporation pits may contain numerous chemicals on the Superfund list," according to its abstract. TEDX indicates that study was accepted for publication in the *International Journal of Human & Ecological Risk Assessment* earlier this month.

TEDX researchers compiled a list, as of May, of some 944 chemicals used in fracking operations in the United States. They were able to find 95 percent or more of the ingredients for 131 of the chemicals, and TEDX researchers were able to locate health and safety information from material safety data sheets for a little more than half of these chemical ingredients. Of these, the study indicates that "more than 75 percent of the chemicals on the list can affect the skin, eyes and other sensory organs, the respiratory system, the gastrointestinal system and the liver. Over half the chemicals show effects in the brain and nervous system." More than a quarter of the chemicals were carcinogens. And about 37 percent are volatile and can become airborne.

At the same time, EPA earlier this month held its final round of meetings seeking public input on the scope of the fracking study.

At a Sept. 13 meeting in Binghamton, NY, the environmental group Riverkeeper released a new report, "Fractured Communities," to highlight case studies of environmental harm caused by, or suspected to be due to, fracking. These include well blowouts, drinking water contamination, illegal discharges, surface water spills, improper wastewater treatment, gas migration, permit violations, and air, geologic and surface water impacts.

Also at the hearing, a resident of Dimock, PA, presented evidence that her drinking water well was contaminated by natural gas drilling chemicals, similar to findings of a separate EPA study conducted in Pavillion, WY, though the agency has not yet determined the cause of the contamination there and is working with the Bureau of Land Management and state agencies to reach a conclusion, though sources say that may not be possible.

The Riverkeeper report, which is designed to help inform EPA's study, also contains wide-ranging recommendations, including asking the EPA inspector general (IG) to resume its investigation "into the potential mishandling of information associated with the agency's 2004 study of fracturing and coalbed methane which has been widely criticized as politically motivated and scientifically flawed." The IG began its investigation after an EPA whistleblower raised questions about the conclusions of the original EPA study, which found that fracturing did not need to be regulated. But the IG probe was put on hold shortly after Congress exempted fracking as part of energy legislation enacted in August of 2005. One source familiar with the IG's initial work said the office "decided there was no longer a cause for investigation" after Congress granted the exemption.

Riverkeeper also says EPA must "ensure that its current study on hydraulic fracturing remains scientifically sound, unbiased and free of political pressure from any special interest. The agency should stand by its commitment to use a lifecycle analysis approach in order to measure the diverse range of impacts that result from gas drilling and the current study should lead the way for other long-term scientific assessments on this and other important environmental issues."

One source familiar with the report says the case studies are designed to help EPA go forward with its study and provide support for a broad lifecycle approach, rather than a narrow look only at the fracturing aspect of drilling, as industry is seeking. EPA should not just study the practice of fracturing but look "at all the potential impacts of hydraulic fracturing operations, including site preparation, water withdrawals, wastewater treatment, gas migration and all the ways water may become contaminated," the source says.

Meanwhile, EPA's Science Advisory Board (SAB) is seeking comment on nominees to serve on an ad hoc panel to review the fracking study, which is being headed by EPA's Office of Research & Development. SAB posted a list of potential nominees Sept. 20 and will take comment through Oct. 1 before making a final decision on panelists.

SAB's Environmental Engineering Committee provided advice to EPA in June on its fracking scoping document, which the agency is accepting comment on through Sept. 28. The new ad hoc panel will provide independent advice to EPA on the study in 2012, SAB says.

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